

WHAT IS CLAIMED IS:

1. A fixing apparatus comprising:

a first rotatable member having an endless configuration;

5           a second rotatable member in pressure contact with said first rotatable member, said second rotatable member causing a recording material bearing an image to be nipped and conveyed at a pressure contact portion between said first and second  
10   rotatable members;

temperature raising means for raising temperature of a local portion of said first rotatable member by reception of supply of electric power;

15           temperature detecting means for detecting temperature of a location different from said pressure contact portion with respect to a rotational direction of said first rotatable member;

first control means for feedback-controlling  
20   electric power to be supplied to said temperature raising means based on the temperature detected by said temperature detecting means;

setting means for variably setting a set value corresponding to electric power to be supplied to  
25   said temperature raising means, based on a temperature rise speed detected by said temperature detecting means when a predetermined amount of

electric power is supplied; and

second control means for temporally supplying electric power corresponding to the set value set by said setting means to said temperature raising means  
5 in timing close to timing in which the temperature detected by said temperature detecting means reaches a target temperature, or timing close to timing in which the recording material rushes in said pressure contact portion when said fixing apparatus is started  
10 up.

2. A fixing apparatus according to claim 1, wherein time  $t$  of period for which said second control means is operated is represented by  $t \leq (a + L) / V$  where  $V$  is a moving speed of an outer  
15 circumference of said first rotatable member,  $a$  is a length of said first rotatable member from said pressure contact portion to said temperature detection location, and  $L$  is an outer circumferential  
20 length of said first rotatable member.

3. A fixing apparatus according to claim 1 or 2, wherein said temperature raising means includes a heater to be heated by supply of electric power,  
25 which is provided close to said pressure contact portion, or a coil for generating magnetic field due to supply of electric power and causing eddy current

to occur in said first rotatable member, which is provided close to said pressure contact portion.

4. A fixing apparatus according to claim 1 or 2,  
5 further comprising a nonvolatile memory for storing a value corresponding to the temperature rise speed detected by said temperature detecting means when the predetermined amount of electric power is supplied, and the set value set by said setting means.

10

5. An image forming apparatus in which an image is formed on a recording material, and the image on the recording material is fixed using said fixing apparatus recited in claim 1 or 2.

15

6. A fixing apparatus according to claim 1 or 2, further comprising first judging means for judging a heat storage condition of said fixing apparatus, and wherein said setting means variably sets the set  
20 value corresponding to electric power to be supplied to said temperature raising means, based on a judgment result obtained by said first judging means, and the temperature rise speed detected by said temperature detecting means when the predetermined  
25 amount of electric power is supplied.

7. A fixing apparatus according to claim 1 or 2,

further comprising second judging means for judging the kind of the recording material, and wherein said setting means variably sets the set value corresponding to electric power to be supplied to said temperature raising means, based on a judgment result obtained by said second judging means, and the temperature rise speed detected by said temperature detecting means when the predetermined amount of electric power is supplied.

10

8. A fixing apparatus comprising:

a first rotatable member having an endless configuration;

a second rotatable member in pressure contact with said first rotatable member, said second rotatable member for causing a recording material bearing an image to be nipped and conveyed at a pressure contact portion between said first and second rotatable members;

20 temperature raising means for raising temperature of a local portion of said first rotatable member by reception of supply of electric power;

25 first temperature detecting means for detecting temperature of a location different from said pressure contact portion with respect to a rotational direction of said first rotatable member;

second temperature detecting means provided near  
said pressure contact portion;

first control means for feedback-controlling  
electric power to be supplied to said temperature  
5 raising means based on the temperature detected by  
said first temperature detecting means;

setting means for variably setting a set value  
corresponding to electric power to be supplied to  
said temperature raising means, based on a  
10 temperature rise speed detected by said second  
temperature detecting means when a predetermined  
amount of electric power is supplied; and

second control means for temporally supplying  
electric power corresponding to the set value set by  
15 said setting means to said temperature raising means  
in timing close to timing in which the temperature  
detected by said temperature detecting means reaches  
a target temperature, or timing close to timing in  
which the recording material rushes in said pressure  
20 contact portion when said fixing apparatus is started  
up.

9. A fixing apparatus according to claim 8,  
wherein time  $t$  of period for which said second  
25 control means is operated is represented by  $t \leq (a + L) / V$  where  $V$  is a moving speed of an outer  
circumference of said first rotatable member,  $a$  is a

length of said first rotatable member from said pressure contact portion to said temperature detection location, and L is an outer circumferential length of said first rotatable member.

5

10. A fixing apparatus according to claim 8 or 9, wherein said temperature raising means includes a heater to be heated by supply of electric power, which is provided close to said pressure contact  
10 portion, or a coil for generating magnetic field due to supply of electric power and causing eddy current to occur in said first rotatable member, which is provided close to said pressure contact portion.

15

11. A fixing apparatus according to claim 8 or 9, further comprising a nonvolatile memory for storing the set value set by said setting means.

20

12. An image forming apparatus in which an image is formed on a recording material, and the image on the recording material is fixed using said fixing apparatus recited in claim 8 or 9.

25

13. A fixing apparatus according to claim 8 or 9, further comprising first judging means for judging a heat storage condition of said fixing apparatus, and wherein said setting means variably sets the set

value corresponding to electric power to be supplied  
to said temperature raising means, based on a  
judgment result obtained by said first judging means,  
and the temperature rise speed detected by said  
5 temperature detecting means when the predetermined  
amount of electric power is supplied.

14. A fixing apparatus according to claim 8 or  
9, further comprising a second judging means for  
10 judging the kind of the recording material, and  
wherein said setting means variably sets the set  
value corresponding to electric power to be supplied  
to said temperature raising means, based on a  
judgment result obtained by said second judging means,  
15 and the temperature rise speed detected by said  
temperature detecting means when the predetermined  
amount of electric power is supplied.